CHAPTER 4

Configuring Layer 3 Interfaces

This chapter describes how to configure Layer 3 interfaces.

This chapter includes the following sections:

Information About Layer 3 Interfaces

Layer 3 interfaces forward IPv4 and IPv6 packets to another device using static or dynamic routing protocols. You can use Layer 3 interfaces for IP routing and inter-VLAN routing of Layer 2 traffic.

This section includes the following topics:

Routed Interfaces

You can configure a port as a Layer 2 interface or a Layer 3 interface. A routed interface is a physical port that can route IP traffic to another device. A routed interface is a Layer 3 interface only and does not support Layer 2 protocols, such as the Spanning Tree Protocol (STP).

All Ethernet ports are routed interfaces by default. You can change this default behavior with the CLI setup script.

You can assign an IP address to the port, enable routing, and assign routing protocol characteristics to this routed interface.

You can also create a Layer 3 port channel from routed interfaces. For more information on port channels, see Chapter 5, “Configuring Port Channels.”

Routed interfaces and subinterfaces support exponentially-decayed rate counters. NX-OS tracks the following statistics with these averaging counters:

- Input packets/sec
- Output packets/sec
- Input bytes/sec
- Output bytes/sec

Subinterfaces

You can create virtual subinterfaces on a parent interface configured as a Layer 3 interface. A parent interface can be a physical port or a port channel.

Subinterfaces divide the parent interface into two or more virtual interfaces on which you can assign unique Layer 3 parameters such as IP addresses and dynamic routing protocols. The IP address for each subinterface should be in a different subnet from any other subinterface on the parent interface.

You create a subinterface with a name that consists of the parent interface name (for example, Ethernet 2/1) followed by a period and then by a number that is unique for that subinterface. For example, you could create a subinterface for Ethernet interface 2/ 1 named Ethernet 2/1.1 where .1 indicates the subinterface.

NX-OS enables subinterfaces when the parent interface is enabled. You can shut down a subinterface independent of shutting down the parent interface. If you shut down the parent interface, NX-OS shuts down all associated subinterfaces as well.

One use of subinterfaces is to provide unique Layer 3 interfaces to each virtual local area network (VLAN) supported by the parent interface. In this scenario, the parent interface connects to a Layer 2 trunking port on another device. You configure a subinterface and associate the subinterface to a VLAN ID using 802.1Q trunking.

Figure 4-1 shows a trunking port from a switch that connects to router B on interface E 2/1. This interface contains three subinterfaces that are associated with each of the three VLANs carried by the trunking port.

Figure 4-1 Subinterfaces for VLANs

For more information on VLANs, see the *Cisco DCNM Layer 2 Switching Configuration Guide, Release 4.0*.

VLAN Interfaces

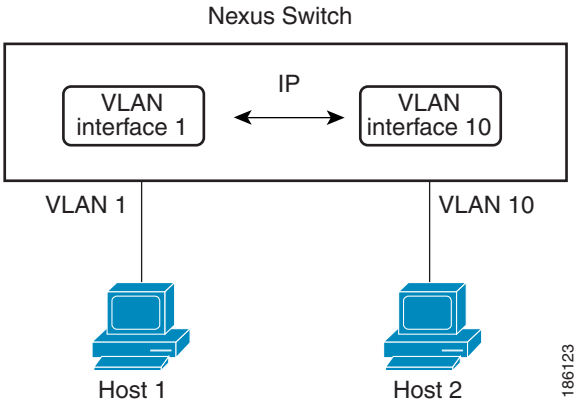
A VLAN network interface is a virtual routed interface that connects a VLAN on the device to the Layer 3 router engine on the same device. Only one VLAN network interface can be associated with a VLAN, but you need to configure a VLAN network interface for a VLAN only when you wish to route between VLANs or to provide IP host connectivity to the device through a virtual routing and forwarding (VRF) instance that is not the management VRF. When you enable VLAN network interface creation, NX-OS creates a VLAN network interface for the default VLAN (VLAN 1) to permit remote switch administration.

Note VLAN network interfaceYou cannot delete the VLAN interface for VLAN 1.

You can route across VLAN interfaces to provide Layer 3 inter-VLAN routing by configuring a VLAN interface for each VLAN that you want to route traffic to and assigning an IP address on the VLAN interface. For more information on IP addresses and IP routing, see the *Cisco DCNM Unicast Routing Configuration Guide, Release 4.0*.

Figure 4-2 shows two hosts connected to two VLANs on a device. You can configure VLAN interfaces for each VLAN that allows Host 1 to communicate with Host 2 using IP routing between the VLANs. VLAN 1 communicates at Layer 3 over VLAN interface 1and VLAN 10 communicates at Layer 3 over VLAN interface 10.

Figure 4-2 Connecting Two VLANs with VLAN interfaces



Loopback Interfaces

A loopback interface is a virtual interface with a single endpoint that is always up. Any packet transmitted over a loopback interface is immediately received by this interface. Loopback interfaces emulate a physical interface. You can configure up to 1024 loopback interfaces per VDC, numbered 0 to 1023.

You can use loopback interfaces for performance analysis, testing, and local communications. Loopback interfaces can act as a termination address for routing protocol sessions. This loopback configuration allows routing protocol sessions to stay up even if some of the outbound interfaces are down.

Tunnel Interfaces

DCNM supports tunnel interfaces as IP tunnels. IP tunnels can encapsulate a same-layer or higher layer protocol and transport the result over IP through a tunnel created between two routers. See Chapter 6, "Configuring IP Tunnels" for more information on IP tunnels.

High Availability

Layer 3 interfaces support stateful and stateless restarts. After the switchover, NX-OS applies the runtime configuration after the switchover.

See the *Cisco NX-OS High Availability and Redundancy Guide, Release 4.0* for complete information on high availability.

Virtualization Support

Layer 3 interfaces support Virtual Routing and Forwarding instances (VRFs). VRFs exist within virtual device contexts (VDCs). By default, NX-OS places you in the default VDC and default VRF unless you specifically configure another VDC and VRF. A Layer 3 logical interface (VLAN interface, loopback) configured in one VDC is isolated from a Layer 3 logical interface with the same number configured in another VDC. For example, loopback 0 in VDC 1 is independent of loopback 0 in VDC 2.

You can configure up to 1024 loopback interfaces per VDC.

You can associate the interface with a VRF. For VLAN interfaces, you must configure the VLAN interface in the same VDC as the VLAN.

See the*Cisco DCNM Virtual Device Context Configuration Guide, Release 4.0* for information about VDCs and see the *Cisco DCNM Unicast Routing Configuration Guide, Release 4.0* for information about configuring an interface in a VRF.

Note You must assign an interface to a VRF before you configure the IP address for that interface.

Licensing Requirements for Layer 3 Interfaces

The following table shows the licensing requirements for this feature:

Product	License Requirement
DCNM	Layer 3 interfaces require no license. For a complete explanation of the DCNM licensing scheme and how to obtain and apply licenses, see the *Cisco DCNM Licensing Guide.*
NX-OS	Layer 3 interfaces require no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the NX-OS licensing scheme, see the *Cisco NX-OS Licensing Guide*.

Prerequisites for Layer 3 Interfaces

Layer 3 interfaces have the following prerequisites:

- You have installed the Advanced Services license and entered the desired VDC (see the *Cisco DCNM Virtual Device Context Configuration Guide, Release 4.0* if you are configuring VDCs.
- You are familiar with IP addressing and basic configuration. See the *Cisco DCNM Unicast Routing Configuration Guide, Release 4.0* for more information on IP addressing.

Guidelines and Limitations

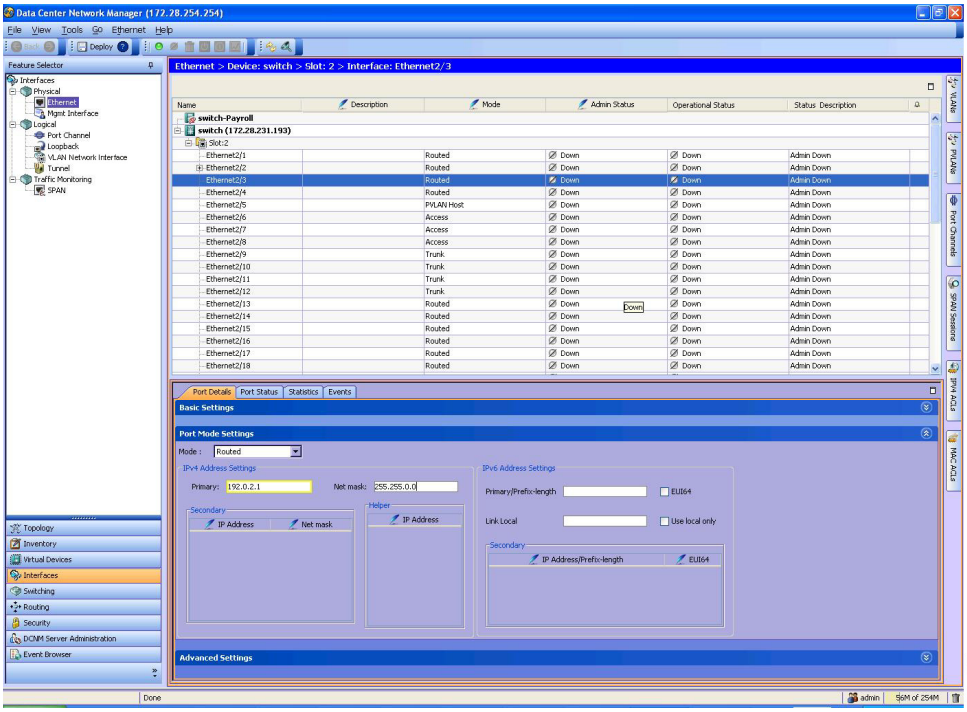
Layer 3 interfaces have the following configuration guidelines and limitations:

- If you change a Layer 3 interface to a Layer 2 interface, NX-OS shuts down the interface, reenables the interface, and removes all configuration specific to Layer 3.
- If you change a Layer 2 interface to a Layer 3 interface, NX-OS shuts down the interface, reenables the interface, and deletes all configuration specific to Layer 2.

Configuring Layer 3 Interfaces

You can access Layer 3 interfaces from the Interfaces feature selection. Figure 4-3 shows the Layer 3 interfaces.

Figure 4-3 Configuring Layer 3 Interfaces



For more information about the Data Center Network Manager features, see the *Cisco DCNM Fundamentals Configuration Guide, Release 4.0*

This section includes the following topics:

Configuring a Routed Interface

You can configure any Ethernet port as a routed interface.

DETAILED STEPS

To configure a routed interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane (see Figure 4-3).

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to configure as a routed interface.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the Details pane, click the **Port Details** tab.

The Port Details tab appears.

Step 6 From the Port Details tab, expand the **Port Mode Settings** section.

The port mode appears.

Step 7 From the Mode drop-down list, choose **Routed**.

The IP address information appears in the Details pane and NX-OS removes any Layer 2 configuration.

Step 8 (Optional) From the IPv4 Address Settings, set the Primary field to the IPv4 address for this routed interface.

Step 9 (Optional) Set the Net mask field to the network mask for this IPv4 address in dotted decimal notation.

Step 10 (Optional) From the IPv6 Address Settings area, set the Primary/prefix-length field to the IPv6 address and prefix length for this routed interface.

The length range is from 1 to 128.

Step 11 (Optional) To set EUI64, check **EUI64**.

Step 12 (Optional) From the Link local field, enter the link local IPv6 address.

Step 13 (Optional) To set this routed interface for link-local routing only, check **Use local only**.

Step 14 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring an IPv4 Secondary Address or Helper Address

You can configure secondary addresses or helper addresses for an interface.

DETAILED STEPS

To configure an IPv4 secondary address or helper address on a routed interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane (see Figure 4-3).

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to configure as a routed interface.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the Details pane, click the **Port Details** tab.

The Port Details tab appears.

Step 6 From the Port Details tab, expand the **Port Mode Settings** section.

The port mode appears.

Step 7 (Optional) From the IPv4 Address settings section, in the Secondary area, right-click and choose **Add Secondary IP** to add a secondary IP address.

Step 8 From the secondary area, in the IP address field, enter an IPv4 address.

Step 9 From the net mask field, enter the network mask for this IPv4 address in dotted decimal notation.

Step 10 (Optional) From the IPv4 Address settings section, in the Helper area, right-click and choose **Add Helper IP** to add a helper IP address.

Step 11 From the Helper area, in the IP address field, enter an IPv4 address.

Step 12 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring an IPv6 Secondary Address

You can configure secondary addresses or helper addresses for an interface.

DETAILED STEPS

To configure an IPv6 secondary address on a routed interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane (see Figure 4-3).

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to configure as a routed interface.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the Details pane, click the **Port Details** tab.

The Port Details tab appears.

Step 6 From the Port Details tab, expand the **Port Mode Settings** section.

The port mode appears.

Step 7 From the IPv6 Address settings section, in the Secondary area, right-click and choose **Add IPv6 Address** to add a secondary IPv6 address.

Step 8 From the IP Address/Prefix-length field, enter the IPv6 address and prefix length for this secondary IPv6 address.

Step 9 (Optional) To set EUI64, check **EUI64**.

Step 10 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring a Subinterface

You can configure one or more subinterfaces on a routed interface or on a port channel made from routed interfaces.

BEFORE YOU BEGIN

Configure the parent interface as a routed interface.

See the "Configuring a Routed Interface" section on page 4-6.

Create the port-channel interface if you want to create a subinterface on that port channel (see the "Configuring Port Channels" section on page 5-12).

DETAILED STEPS

To create a subinterface on a routed interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to configure a subinterface on.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the menu bar, choose **Ethernet > Add Subinterface** to create a subinterface.

The system highlights the subinterface in the Summary pane, and tabs update in the Details pane.

Step 6 From the highlighted subinterface field, enter the subinterface number.

The range is from 1 to 4093.

Step 7 From the Details pane, click the **Port Details** tab.

The Port Details tab appears.

Step 8 From the Port Details tab, expand the **Basic Settings** section.

The basic interface information appears in the Details pane.

Step 9 (Optional) From the encapsulation area, in the Vlan Id drop-down list, choose the VLAN ID that you want to associate this subinterface with.

Step 10 From the Port Details tab, expand the **IP Address Settings** section.

The IP address information appears in the Details pane.

Step 11 (Optional) From the IPv4 Address Settings, set the Primary field to the IPv4 address for this subinterface.

Step 12 (Optional) From the Net mask field, set the network mask for this IPv4 address in dotted decimal notation.

Step 13 (Optional) From the IPv6 Address Settings area, set the Primary/Prefix-length field to the IPv6 address and prefix length for this subinterface.

The length range is from 1 to 128.

Step 14 (Optional) To set EUI64, check **EUI64**.

Step 15 (Optional) From the Link Local field, enter the link local IPv6 address.

Step 16 (Optional) To set this subinterface for link-local routing only, check **Use local only**.

Step 17 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Deleting a Subinterface

You can delete a subinterface.

DETAILED STEPS

To delete a subinterface on a routed interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to delete a subinterface on.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 Click the subinterface that you want to delete.

The system highlights the subinterface in the Summary pane.

Step 6 From the menu bar, choose **Ethernet > Delete Subinterface** to delete this subinterface.

Step 7 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Creating a Port-Channel Subinterface

You can create a port-channel subinterface.

DETAILED STEPS

To create a subinterface on a port channel, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Port Channel**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of existing port channels.

Step 3 Right-click the port channel that you want to configure a subinterface on and choose **New > Subinterface**.

The system highlights the port channel subinterface in the Summary pane, and tabs appear in the Details pane.

Step 4 From the highlighted Channel Id field, enter the subinterface number.

The range is from 1 to 4093.

Step 5 From the Details pane, click the **Port Channels Details** tab.

The Details tab appears.

Step 6 From the Details tab, expand the **Basic Settings** section.

The basic interface information appears in the Details pane.

Step 7 (Optional) From the encapsulation area, in the VLAN ID drop-down list, choose the VLAN ID that you want to associate this subinterface with.

Step 8 From the Details tab, expand the **IP Address Settings** section.

The IP address information appears in the Details pane.

Step 9 (Optional) From the IPv4 Address Settings, set the IP Address field to the IPv4 address for this subinterface.

Step 10 (Optional) From the Net Mask field, set the network mask for this IPv4 address in dotted decimal notation.

Step 11 (Optional) From the IPv6 Address Settings area, set the Primary/Prefix-length field to the IPv6 address and prefix length for this subinterface.

The length range is from 1 to 128.

Step 12 (Optional) To set EUI64, check **EUI64**.

Step 13 (Optional) From the Link Local field, enter the link local IPv6 address.

Step 14 (Optional) To set this subinterface for link-local routing only, check **Use local only**.

Step 15 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Deleting a Port-Channel Subinterface

You can delete a port-channel subinterface.

DETAILED STEPS

To delete a subinterface on a port channel, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Port Channel**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of port channels.

Step 3 Click the port channel that you want to delete a subinterface on.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 4 Click the subinterface that you want to delete.

The system highlights the subinterface in the Summary pane.

Step 5 From the menu bar, choose **Port Channel > Delete** to delete this subinterface.

Step 6 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring the Bandwidth on an Interface

You can configure the bandwidth for a routed interface, port channel, or subinterface. Higher layer protocols use bandwidth parameter to calculate path costs. You can configure the bandwidth on a subinterface with one of the following methods:

- Explicit—Set the bandwidth value for the subinterface directly.
- Inherit—Set the bandwidth that all subinterfaces inherit from the parent interface. This can either be a specific value or can be the bandwidth of the parent interface.

If you do not set the subinterface bandwidth or configure it to inherit the bandwidth from the parent interface, NX-OS determines the subinterface bandwidth as follows:

- If the parent interface is up then the bandwidth of the subinterface is the same as the operational speed of the parent interface. For ports, the subinterface bandwidth is the configured or negotiated link speed. For port channels the subinterface bandwidth is the aggregate of the link speeds of individual members of the port channel.
- If the parent interface is down, then the bandwidth of the subinterface depends on the type of parent interface:
  - Port-channel subinterfaces have 100Mbps bandwidth for subinterfaces.
  - 1-Gbps Ethernet ports have 1 Gbps bandwidth for subinterfaces.
  - 10-Gbps Ethernet ports have 10 Gbps bandwidth for subinterfaces.

DETAILED STEPS

To configure the bandwidth on an interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Physical > Ethernet**.

The available devices appear in the Summary pane (see Figure 4-3).

Step 2 From the Summary pane, double-click the device to display a list of slots.

Step 3 Double-click the slot to display a list of interfaces.

Step 4 Click the interface that you want to configure the bandwidth on.

The system highlights the interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the Details pane, click the **Port Details** tab.

The Port Details tab appears.

Step 6 From the Port Details tab, expand the **Basic Settings** section.

The basic settings appears.

Step 7 In the Bandwidth (kb) field, enter the bandwidth value.

Step 8 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring a VLAN Network Interface

You can create VLAN interfaces to provide inter-VLAN routing.

DETAILED STEPS

To create a VLAN network interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > VLAN Network Interface**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of existing VLAN network interfaces.

Step 3 From the Details pane, click the **Enable VLAN Network Interface** link if present.

Step 4 From the menu bar, choose **VLAN Network Interface > Add VLAN Network Interface**.

The system highlights the new VLAN Network Interface in the Summary pane, and tabs appear in the Details pane.

Step 5 From the highlighted VLAN network interface field, enter the VLAN network interface number.

The number range is from 1 to 4094.

Step 6 From the Details pane, click the **Details** tab.

The Details tab appears.

Step 7 From the Details tab, expand the **IP Address Settings** section.

The IP address information appears in the Details pane.

Step 8 (Optional) From the IPv4 Address Settings, set the Primary field to the IPv4 address for this VLAN network interface.

Step 9 (Optional) From the Net Mask field, set the network mask for this IPv4 address in dotted decimal notation.

Step 10 (Optional) From the IPv6 Address Settings area, set the Primary/Prefix-length field to the IPv6 address and prefix length for this VLAN network interface.

The length range is from 1 to 128.

Step 11 (Optional) To set EUI64, check **EUI64**.

Step 12 (Optional) From the Link Local field, enter the link local IPv6 address.

Step 13 (Optional) To set this VLAN network interface for link-local routing only, check **Use local only**.

Step 14 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Deleting a VLAN Network Interface

You can delete a VLAN network interface.

DETAILED STEPS

To delete a VLAN network interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > VLAN Network Interface**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of existing VLAN network interfaces.

Step 3 Click the VLAN network interface that you want to delete.

The system highlights the VLAN network interface in the Summary pane, and tabs appear in the Details pane.

Step 4 From the menu bar, choose **VLAN Network Interface > Delete VLAN Network Interface** to delete this VLAN network interface.

Step 5 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Configuring a Loopback Interface

You can configure a loopback interface to create a virtual interface that is always up.

BEFORE YOU BEGIN

Ensure that the IP address of the loopback interface is unique across all routers on the network.

DETAILED STEPS

To create a loopback interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Loopback**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of existing loopback interfaces.

Step 3 From the menu bar, choose **Loopback > Add Loopback Interface**.

The system highlights the new loopback interface in the Summary pane, and tabs appear in the Details pane.

Step 4 From the highlighted loopback field, enter the loopback number.

The number range is from 1 to 4094.

Step 5 From the Details pane, click the **Details** tab.

The Details tab appears.

Step 6 From the Details tab, expand the **IP Address Settings** section.

The IP address information appears in the Details pane.

Step 7 (Optional) From the IPv4 Address Settings, set the Primary field to the IPv4 address for this loopback interface.

Step 8 (Optional) From the Net Mask field, set the network mask for this IPv4 address in dotted decimal notation.

Step 9 (Optional) From the IPv6 Address Settings area, set the Primary/Prefix-length field to the IPv6 address and prefix length for this loopback interface.

The length range is from 1 to 128.

Step 10 (Optional) To set EUI64, check **EUI64**.

Step 11 (Optional) From the Link Local field, enter the link local IPv6 address.

Step 12 (Optional) To set this loopback interface for link-local routing only, check **Use local only**.

Step 13 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Deleting a Loopback Interface

You can delete a loopback interface.

DETAILED STEPS

To delete an loopback interface, follow these steps:

Step 1 From the Feature Selector pane, choose **Interfaces > Logical > Loopback**.

The available devices appear in the Summary pane.

Step 2 From the Summary pane, double-click the device to display a list of existing loopback interfaces.

Step 3 Click the loopback interface that you want to delete.

The system highlights the loopback interface in the Summary pane, and tabs appear in the Details pane.

Step 4 From the menu bar, choose **Loopback > Delete Loopback Interface** to delete this loopback interface.

Step 5 From the menu bar, choose **File > Deploy** to apply your changes to the device.

Displaying Layer 3 Interfaces Statistics

You can configure DCNM to collect layer 3 interface statistics. Choose **Interfaces** from the Feature Selector and navigate to the interface that you want to collect statistics on.

The following windows appear in the Statistics tab:

- Port Traffic Statistics—Collects input and output (packet and byte) counters, broadcast, multicast, and unicast traffic.
- Port Error Statistics—(physical ports only) Collects a variety of error statistics for the interface.

See the Cisco *DCNM Fundamentals Configuration Guide* for more information on collecting statistics for layer 3 interfaces.

Related Topics

The following topics can give more information on layer 3 interfaces:

- Chapter 5, "Configuring Port Channels"
- *Cisco DCNM Unicast Routing Configuration Guide, Release 4.0*

Field Descriptions for Layer 3 Interfaces

This section includes the following field descriptions for layer 3 interfaces:

Routed Interfaces

Field descriptions for routed interfaces are covered in Chapter 2, "Configuring Basic Interface Parameters."

Loopback

Loopback: Details Tab: Basic Settings Section

Table 4-1 Loopback: Details: Basic Settings

Field	Description
Name	*Display only.* Name of the loopback interface.
Description	String that describes the loopback interface.
Admin Status	Administrative status of the loopback interface. The default is up.

Loopback: Details Tab: IP Address Settings Section

Table 4-2 Loopback: Details: IP Address Settings

Field	Description
IPv4 Address Settings	
Primary	IPv4 address in dotted decimal notation.
Net Mask	Network mask for the IPv4 address in dotted decimal notation.
Secondary IP Address	Secondary IPv4 address in dotted decimal notation. You can configure multiple secondary addresses for an interface.
Secondary NetMask	Network mask for the secondary IPv4 address in dotted decimal notation.
Helper IP Address	Helper address used to enable the forwarding of User Datagram Protocol (UDP) broadcasts.
IPv6 Address Settings	
Primary/Prefix-length	IPv6 prefix in an x:x:x::x/length format.
EUI64	IPv6 address that is in the extended universal identifier (EUI)-64 format.

Table 4-2 Loopback: Details: IP Address Settings (continued)

Field	Description
Link Local	IPv6 link local address in an x:x:x::x format.
Use local only	Link local address overrides automatically generated IPv6 address.
Secondary IP Address/Prefix Length	Secondary IPv6 prefix in an x:x:x::x/length format.You can configure multiple secondary addresses for an interface.
EUI64	Secondary IPv6 address that is in the extended universal identifier (EUI)-64 format.

Loopback: Statistics Tab

Table 4-3 Loopback: Statistics Tab

Field	Description
Status	Status of statistics collection. Roll over Status to get a popup tip.
Select Parameters	List of statistics that can be gathered on loopback interfaces.
Show Overview Chart	Overview pop-up of statistics.

VLAN Network Interface

- This section includes the following field descriptions for VLAN network interfaces:
- VLAN Network Interface: Details Tab: Basic Settings Section, page 4-17
- VLAN Network Interface: Details Tab: IP Address Settings Section, page 4-18
- VLAN Network Interface: Statistics Tab, page 4-18

VLAN Network Interface: Details Tab: Basic Settings Section

Table 4-4 VLAN Network Interface: Details: Basic Settings

Field	Description
Name	*Display only.* Name of the VLAN network interface.
Admin Status	Administrative status of the VLAN network interface. the default is up.
MTU (bytes)	Maximum Transmission Unit. The default is 1500.
delay (tens of usecs)	Interface throughput delay, in tens of microseconds. The default is 1 (10 microseconds).
Description	String that describes the VLAN network interface.
Oper Status	Operational status of the VLAN network interface.
Bandwidth (kb)	Interface bandwidth of the VLAN network interface in kilobytes. The default is 100000.

VLAN Network Interface: Details Tab: IP Address Settings Section

Table 4-5 VLAN Network Interface: Details: IP Address Settings

Field	Description
IPv4 Address Settings	
Primary	IPv4 Address, in dotted decimal notation.
Net mask	Network mask for the IPv4 address in dotted decimal notation.
Secondary IP Address	Secondary IPv4 Address, in dotted decimal notation. You can configure multiple secondary addresses for an interface.
Secondary NetMask	Network mask for the secondary IPv4 address in dotted decimal notation.
Helper IP Address	Helper address used to enable the forwarding of User Datagram Protocol (UDP) broadcasts.
IPv6Address Settings	
Primary/Prefix-length	IPv6 prefix in x:x:x::x/length format.
EUI64	IPv6 address that is in the extended universal identifier (EUI)-64 format.
Link Local	IPv6 link local address in an x:x:x::x format.
Use local only	Link local address that overrides automatically generated IPv6 address.
Secondary IP Address/Prefix Length	Secondary IPv6 prefix in an x:x:x::x/length format. You can configure multiple secondary addresses for an interface.
EUI64	Secondary IPv6 address that is in the extended universal identifier (EUI)-64 format.

VLAN Network Interface: Statistics Tab

Table 4-6 VLAN Network Interface: Statistics Tab

Field	Description
Status	Status of statistics collection. Roll over Status to get a popup tip.
Select Parameters	List of statistics that can be gathered on VLAN network interfaces.
Show Overview Chart	Overview pop-up of statistics.

Additional References

For additional information related to implementing Layer 3 interfaces, see the following sections:

- Related Documents, page 4-19
- MIBs, page 4-19
- Standards, page 4-19

Related Documents

Related Topic	Document Title
command syntax	*Cisco NX-OS Interfaces Command Reference, Release 4.0*
IP	"Configuring IP" chapter in the *Cisco DCNM Unicast Routing Configuration Guide, Release 4.0*
VLANs	"Configuring VLANs" chapter in the *Cisco DCNM Layer 2 Switching Configuration Guide, Release 4.0*

MIBs

MIBs	MIBs Link
• IF-MIB • CISCO-IF-EXTENSION-MIB • ETHERLIKE-MIB	To locate and download MIBs, go to the following URL: http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—

Feature History for Configuring Layer 3 Interfaces

Table 4-7 lists the release history for this feature.

Table 4-7 Feature History for Configuring Layer 3 Interfaces

Feature Name	Releases	Feature Information
SVI	4.0(3)	Changed to VLAN Network Interface on entire DCNM and all documentation.